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Case Report

Inverted Papilloma: A Brain-Like Appearance in the Nose

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Abstract

Inverted papilloma is a benign tumor of the nasal fossa, in which epithelial cells proliferate in clusters (papilloma) toward the underlying chorion: this particular feature is the origin of the name inverted. The most common clinical presentation is unilateral nasal obstruction with rhinorrhea. Complementary assessment requires MRI of the sinus cavities and biopsy. The procedure is surgical and consists of total tumor removal, which is most often performed by endoscopy. The following case illustrates the clinicoradiological and histological aspects of an inverted papilloma in 55-year-old man.

Keywords: *Inverted Papilloma; Nasal Cavity; Medium Turbinate; Imaging*

Introduction

Inverted papilloma (IP) is a benign nasosinusal tumor, which was first described in 1854. It affects a middle-aged man. It is characterized by local aggressiveness, high risk of recurrence, and possible malignant transformation.

Case Presentation

A 55-year-old patient, without any pathological history, who presented for 6 months unilateral right nasal obstruction of progressive aggravation associated with epistaxis episodes, the patient consulted an otolaryngologist who performed a clinical endoscopic examination showing a whitish polypoid and myxoid process in the right nasal fossa; then a biopsy was performed.

Facial CT with PCI injection revealed a heterogeneous tissue process of the right nasal cavity that lyses the middle concha and the walls (Figure 1). Magnetic resonance imaging found a tumor centered on the middle concha of the right nasal cavity, in hyposignal T1, heterogeneous hypersignal T2, with diffusion restriction enhanced in a cerebrifomeric way after Gado injection, measuring 95 x 35 mm, extended backward to the choanae and cavum, forward to the right nostril, inwardly lyses the nasal septum. On this aspect, the first diagnosis to be evoked was an inverted papilloma (Figure 2). The anatomopathological study showed proliferation of polypoid tumor in a hyperplastic respiratory mucosa, the chorion is fibrous, hypervascularized by capillaries, infiltrated by lymphocytes. concluded with a PI without histological signs of malignancy (Figure 3). The patient was then operated, with total removal of the tumor by endoscopic excision.

Discussion

Inverted papilloma (Schneider's papilloma) is a rare benign tumor that accounts for only 0.5 to 4.0% of all tumors that develop in the nasal cavity, often observed in patients between 40 and 60 years of age. It is associated with a high risk of recurrence and potential malignant transformation [1,2].

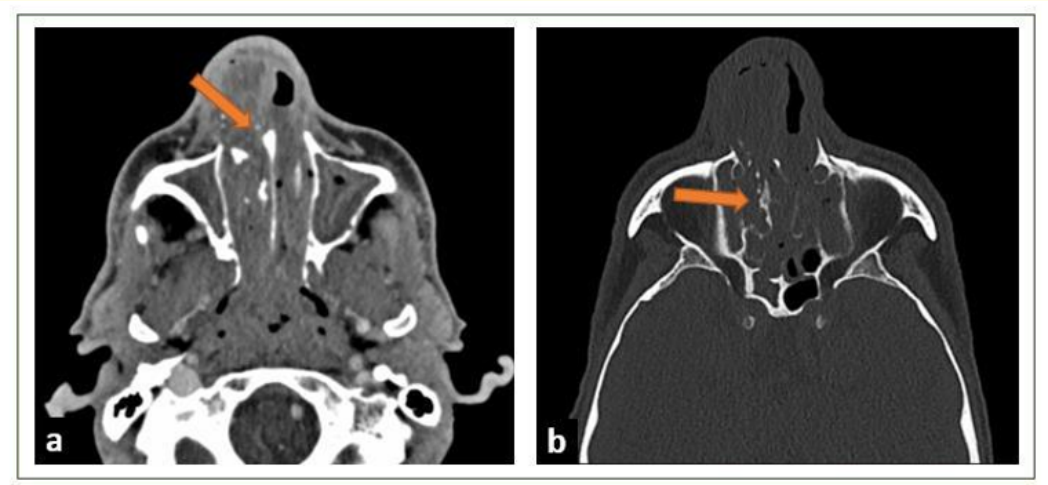

Figure 1: *CT scan of naso-sinus, axial section, parenchymal section showing an irregular hypodense process of the right nasal cavity extended posteriorly to the nasopharynx, (a), and bone section showing bone lysis with intralesional calcifications (b).*

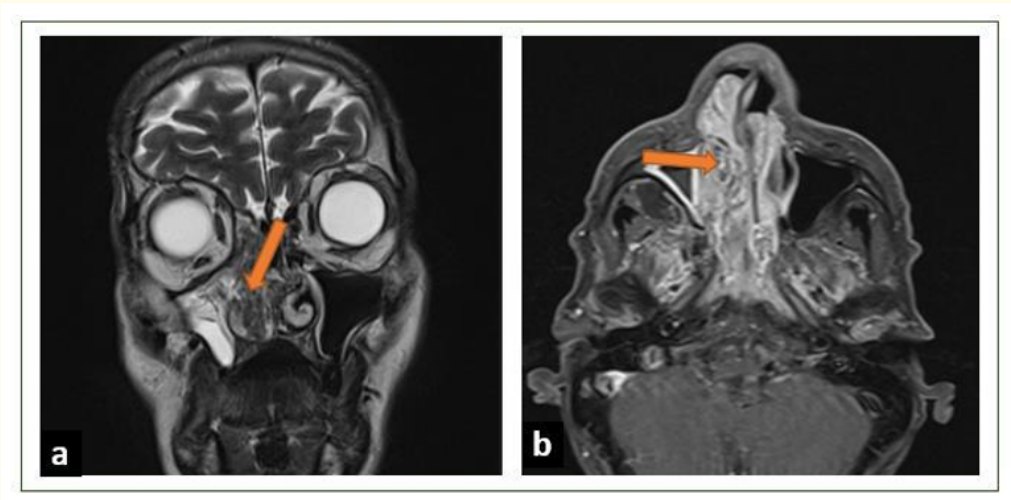

Figure 2: *MRI nasosinusal; (a) coronal section in T2 showing hyposignal processus of the right nasal cavity with destruction of the middle concha. (b) axial section in T1 enhanced showing cerebriform enhancement typical of an inverted papilloma with maxillary obstructive sinusitis.*

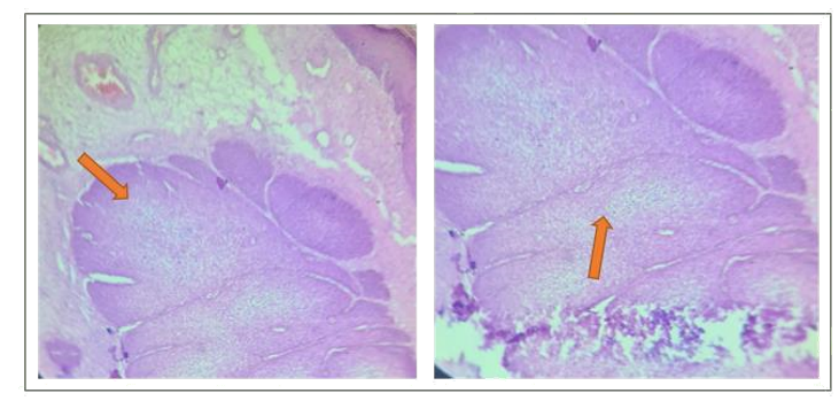

Figure 3: *Histological images showed polypoid tumor proliferation in a hyperplastic respiratory mucosa, the chorion is fibrous, hypervascularized by capillaries, infiltrated by lymphocytes, without signs of malignancy.*

The diagnosis of IP is usually made late, between 1 and 4 years after the onset of the first nasal symptoms [3]. Functional signs are varied and nonspecific: unilateral then possibly bilateral nasal obstruction, epistaxis, anterior and or posterior rhinorrhea, anosmia, hyposmia, headache, or sometimes facial pain. These lesions can also be asymptomatic and their discovery is fortuitous in 4 to 23% of cases [4].

Inverted papilloma develops in the lateral wall of the nasal cavity at the expense of the middle turbinate and the maxillary ostium, if increases in size it can lead to bone lysis with extension to the maxillary sinus [5].

Macroscopically, inverted papillomas are present as irregular polypoid masses, pink in color, easily bleeding [5].

Histologically they are like ribbons of the respiratory epithelium with a basement membrane that proliferate in the underlying stroma, with characteristic micromucosal cysts, of which 20% are partially keratinized, and 10% show dysplasia [6].

The CT scan shows a hypodense mass enhanced slightly after injection in the nasal cavity, sometimes associated with bone lysis and intralesional bone fragments in 40% of cases [1]. The presence of conical hyperostosis is suggestive of the diagnosis and guides the surgical procedure [7].

The typical appearance of the inverted papilloma in MRI is that of a lobulated mass in the nasal cavity with alternating low signal lines and high signal lines in T1 and T2, enhanced after injection with heterogeneous enhancement below the mucosa, mimicking the appearance of cerebral cortical gyrations, which is very characteristic of this tumor [7].

The most important differential diagnoses are sinonasal carcinoma, antrochoanal or inflammatory polyp, juvenile nasopharyngeal angiofibroma, olfactory neuroblastoma, and paranasal sinus mucocele.

The treatment of IP is surgical, consisting of complete removal of the tumor and the lateral nasal wall of which the origin of the tumor must be included, an associated medical treatment based on corticosteroid therapy and antibiotic therapy preoperatively seems to be useful to reduce the risk of inflammation and superinfection after surgery [8].

Conclusion

Inverted papilloma is a rare tumor of the nasosinus cavities, especially revealed by unilateral nasal obstruction. It is characterized by frequent recurrence after surgical treatment and possible association with squamous cell carcinoma of secondary or synchronous appearance of papilloma. CT and magnetic resonance imaging are essential for the evaluation of extension and postoperative surveillance.

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